

Remarks

Memorandum of Interview

On June 18, 2003, Examiner Williams and the undersigned conducted a telephone interview. Product claims 1-4 were discussed. Examiner Williams expressed his position that the recrystallizability of the copper foils constitutes a process limitation of a product claim. As far as claim 4 is concerned, the undersigned argued that the recitation of a Young's modulus clearly does not constitute a process limitation. No agreement was reached.

Amendments to the claims

Applicants have canceled claims 1-4 and introduce new claims 5-29. Claims 5-22 are method claims that cover the subject matter previously covered by claims 1-3. Claims 23 and 24 are directed to copper clad laminates having different Young's moduli. The subject matter of claims 1-3 is presented in process claim format to further the prosecution of the present application. Claims 25, 26 and 29 are new claims following closely in content former claims 1-3. Claims 27 and 28 depend on new claims 25 and 26. Any amendments to the overall claim format were only introduced to clarify the claim language. For support of claims 6, 12 and 18, the Office is directed to page 19, Example 1 of the specification. For support of claims 10, 22 and 24, the Office is directed to page 16, lines 6 to 10. For support of claims 7, 13 and 19, the Office is directed to page 4, line 18. For support of claims 8, 14 and 20, the Office is directed to page 16, lines 1-3 (sentence starting on page 15). For support of claims 9, 15 and 21, the Office is directed to page 16, line 21.

Rejections under 35 U.S.C. §103

The Office rejects claims 1-4 under 35 U.S.C. § 103(a) as being obvious in view

of U.S. Patent No. 5,153,077 to Kashiba et al. and, alternatively, in view of U.S. Patent No. 4,751,146 to Maeda et al.

New claims 5-22 are directed to a process of producing a copper clad laminate.

The presentation of the claims in process format emphasizes the distinctions of the present invention over the cited prior art. Applicants respectfully submit that neither Kashiba et al. nor Maeda et al. teach or suggest all the claim limitations. Applicants further submit that neither Kashiba et al. nor Maeda et al., or the knowledge generally available to one of ordinary skill in the art would lead those in the art to modify the references to arrive at the claimed inventions. Furthermore, even if there were motivation, which applicants deny, there is no reasonable expectation of success. Accordingly, none of the elements that are required for a prima facie case of obviousness are fulfilled.

New claims 23 to 29 are directed to a copper clad laminate.

With regard to claims 23 and 24, Applicants direct the Examiner's attention to the fact that the claims recite that the second copper foil has a lower Young's modulus than said first copper foil. The Young's modulus (also referred to a tensile elastic modulus) is an important property of a material. Loosely, it is a constant that defines the force needed to elongate a material. In the context of the present invention, the use of a copper foil of a lower Young's modulus for the thicker of two copper foils of a copper clad laminate has proven an effective way of solving the problem of warping of copper clad laminates.

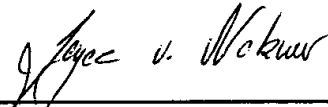
Applicants respectfully submit that neither Kashiba et al. nor Maeda et al. disclose or make obvious the relative Young's moduli of the copper layers used in their printed circuit boards and ceramic-metal composite, respectively. In fact, neither

Kashiba et al. nor Maeda et al. disclose any Young's moduli of the copper layers used in their printed circuit boards and ceramic-metal composite, respectively. Applicants' new claims 23 and 24 have been formulated to emphasize this distinction over the prior art.

With respect to claims 25 to 28, Applicants respectfully submit that neither Kashiba et al. nor Maeda et al. disclose or make obvious the respective state of recrystallization/crystallization or lack thereof of the copper layers used in their printed circuit boards and ceramic-metal composite, respectively. In fact, Kashiba et al. does not mention recrystallization/crystallization of copper layers. Maeda et al. only mentions in column 11, lines 67-68 that, in copper sulfate platings, crystals are minute.

With respect to claim 29, Applicants respectfully submit that neither Kashiba et al. nor Maeda et al. disclose that their copper foils are contracted to different extent during a hot pressing step resulting in a distinctive structural characteristic of the final copper clad laminate, namely, the substantial lack of warping in such a copper clad laminate.

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RESPECTFULLY SUBMITTED,			
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